Root Cellars

Tarrah Young

Green Being Farm
Neustadt, ON

Carrot Cache
www.carrotcache.com

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farmcentre.com

Important prerequisites for successful storage

- Appropriate (Storage) Varieties
- High Quality produce
  - Undamaged
  - High Brix
- Proper Harvest and Curing
  - Harvest when mature, sizeable
  - Frost: friend or foe?
  - Properly cured
  - Sufficiently cooled

Specific Storage Conditions

- Knott's Handbook for Vegetable Growers, Lorenz & Daynard
- Small-Scale Postharvest Handling Practices: A Manual for Horticultural Crops (4th Edition), UC Davis
- Root Cellaring, Mike & Nancy Bubel
- Home Vegetable Storage, Government of Alberta

General Storage Conditions

- Cold & Very Humid: 0°C, 95% Relative Humidity
  - Carrots, beets, parsnips, rutabagas, turnips, celeriac, winter radish, kohlrabi, leeks, jerusalem artichokes (Some recommend 98%, and up to 4°C)
- Cold & Humid: 0-4 °C, 90% RH
  - Potatoes*, cabbage, apples (kept separate)

    *Many recommend 3 – 5°C, and after curing
- Cold & Dry: 0 °C, 65-70% RH
  - Onions and garlic
- “Warm” & Dry: 10-13°C, 50-75% RH
  - Winter squash (sweet potatoes store best at 85-90% RH)

Root Cellar Criteria and Considerations

- Cold
- Humid
- Dark
- Accessible
- Ventilated

- Location
- Walls
- Entrance
- Roof
- Floor
- Design: Layout/ storage containers/ ventilation

Initial work

evolve
BUILDERS GROUP INC

Roof

- Options: flat, peak, vault
- Rot resistant lumber
  - Cedar
  - Hemlock
  - Beware of pressure treated
  - Composite and resin lumbers?
- Strong, especially for earthen roof

Cool-Bot

www.storeitcold.com

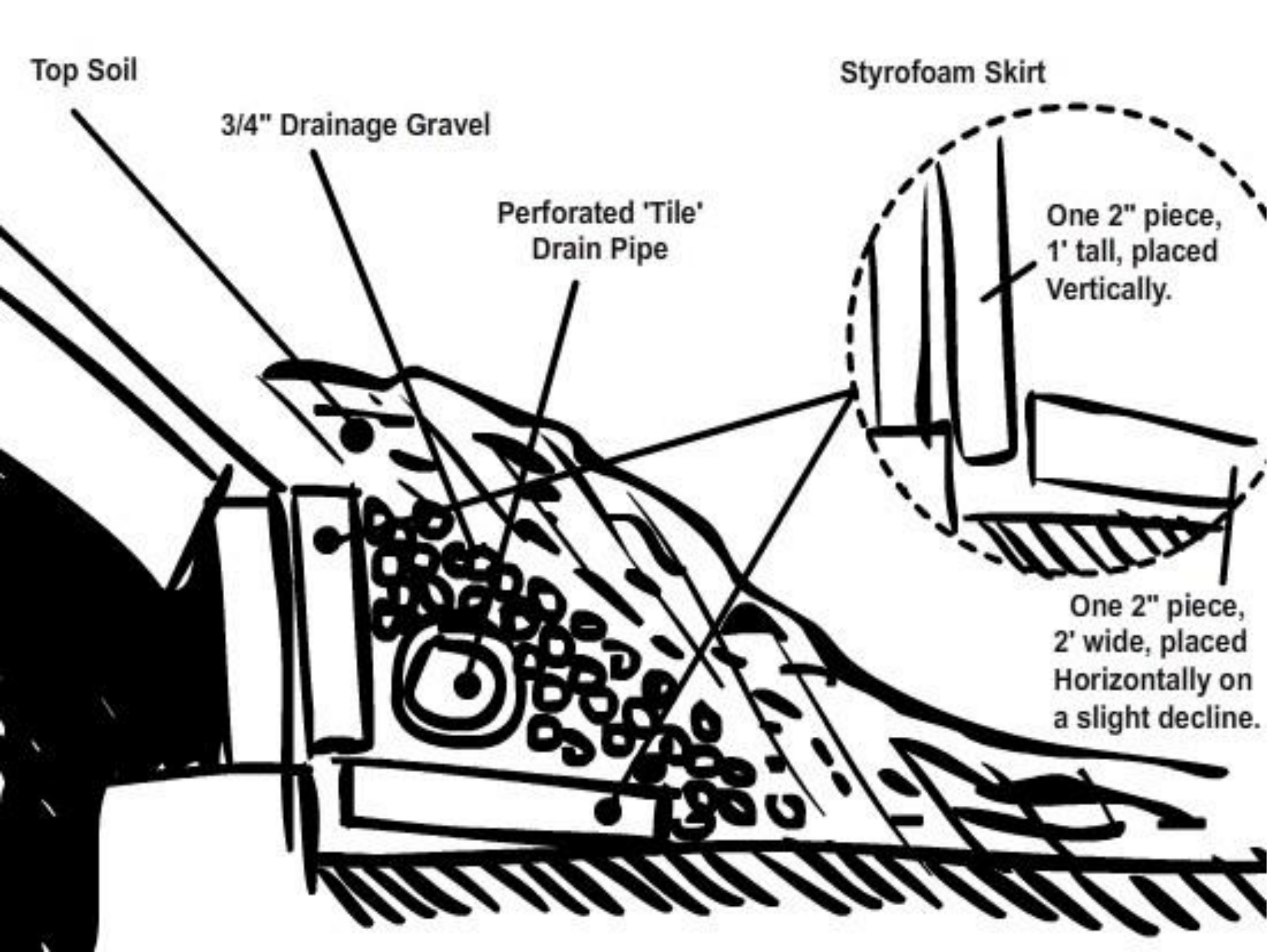
R 30 Soy-Based Insulation

EPDM

- Synthetic rubber
- Waterproofing roofs
- Best done with services of an experienced pro

Entranceway

- 2” thick closed cell styrofoam
- Drain to carry washwater, rain and snowmelt to nearby pond
- Later covered in gravel


Top Soil
3/4" Drainage Gravel
Perforated 'Tile'
Drain Pipe
Styrofoam Skirt
One 2" piece,
1' tall, placed
Vertically.
One 2" piece,
2' wide, placed
Horizontally on
a slight decline.

Retaining Wall

Price Tag= ~$12,000

- Roof (*lumber, epdm, felt, soil)= 3300*
- *Entrance (excavation, retaining walls, door, gravel)= 3300*
- *Insulation (around perimeter + spray)= 3200*
- *Drainage and Ventilation= 250*
- *Rental equip., hardware, misc= 650*

- Cellar can comfortably store 8000 lbs of produce (15 x 30, using 2/3 of space + 1/3 wash station)
- Amortized cost of root cellar over 20 years= $600/yr
- Cost per pound of produce = <$0.08

Storage containers

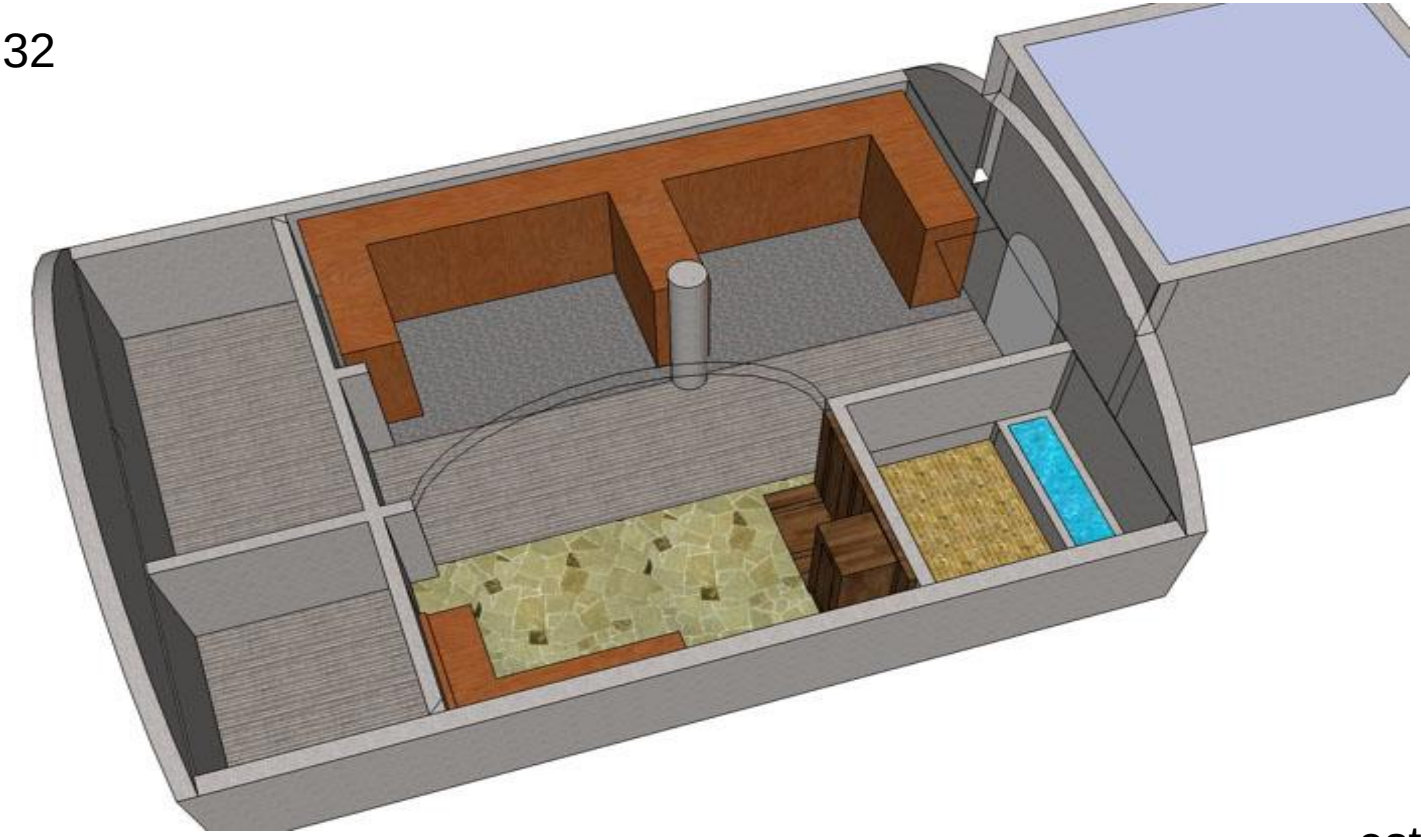
- ¾ ton bins, made of oak, pallet bottom
- Some plastic bin storage
- Burlap sacs
- Other options: rubbermaids (with holes, polyethylene bags (with holes), feed bags...

Finding your inner Root Cellar

- Cold but not freezing
- Proper humidity for desired crop
- Ventilated
- Dark
- Accessible

Zach Loechs and Kylah Dobson, Rainbow Heritage Gardens, Cobden, ON

24 x 32



est. $25,000

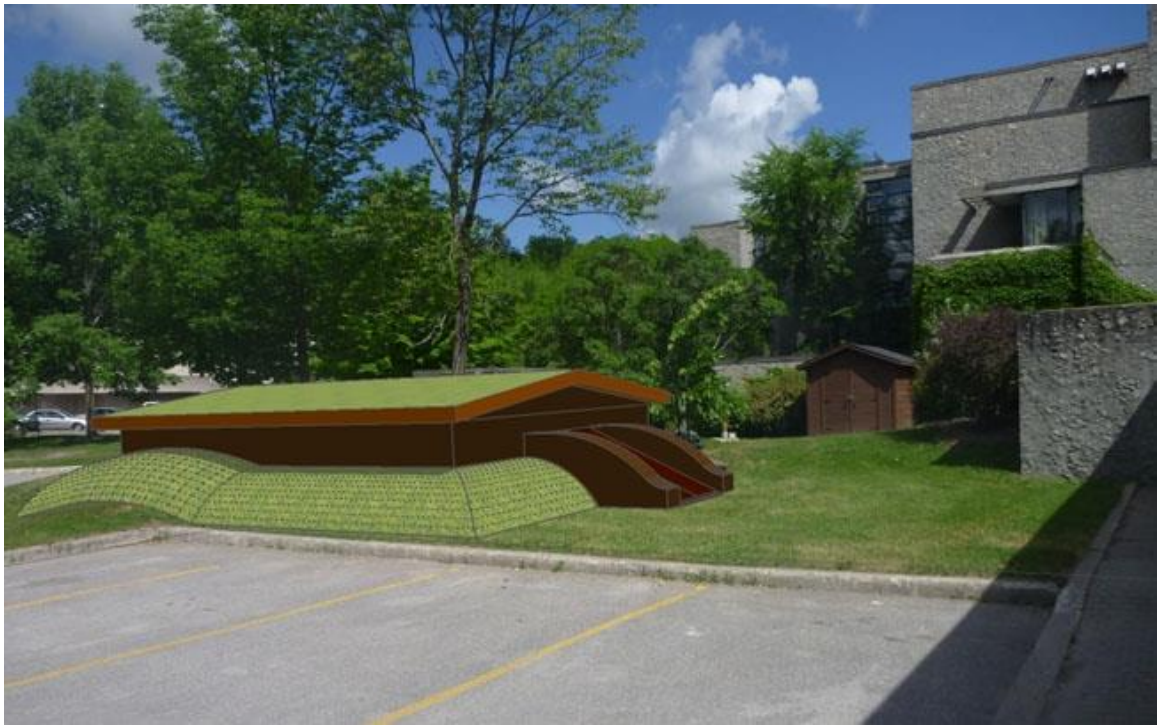
Cory Eichman, Saugeen River CSA, Durham Ontario

15 x 21

$12,000

Seasoned Spoon Root Cellar

- Independent cafe at Trent University, Peterborough, ON
- seanharrisconstruction.com
- 2 rooms:one with dirt floor, one with rammed earth block floor
- seasonedspoon@trentu.ca



15 x 18

$33,000

Robin Turner, Roots and Shoots Farm, Manotick Stn, Ontario

10 x 12

$2,500

Household Root Cellar- Chris Jess, Fergus Ontario

5 x 10

$1,500

Root Cellar Considerations: recap

- Location- accessible, not below water table, in a hill when possible
- Walls- whatever existing foundation you have! Poured concrete, concrete blocks, explore earth bags
- Entrance- wide enough for eventual needs, if no hill: stairs vs ramp
- Roof- flat, peaked, vaulted
- Floor- earthen is best, concrete has some benefits, consider drainage
- Layout/design/storage/ ventilation
  - Accessibility is key
  - Bins: large crates (plastic or wood), small crates, 5 gallon pails, rubbermaids (with holes ideally), feed or burlap sacs, polyethylene bags with holes
  - Ventilation: allow for air movement- shelves impede circulation, air intake and outlet
- Successful storage starts now!

Interesting links

- Cheap, damaged pre-cast septic: http://www.motherearthnews.com/Organic-Gardening/1983-07-01/A-Flatlanders-Root-Cellar.aspx
- Earth bag, vaulted ceiling:http://www.earthbagbuilding.com/projects/rootcellar.htm
- www.youtube.com (buried container, clamps, barrels, etc)

The end!
Time for more questions?

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